

# Clinical practice of minimally invasive gynaecological surgeries

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## Abstract

**Introduction:** Endoscopic gynaecological surgery which is a routine practice in outer world since last 40 years, is still at earlier phase in Nepal. This study was done to know the clinical practice of minimally invasive gynaecological surgeries in Minimally Invasive Diagnostic and Therapeutic (MIDAT) hospital.

**Methods:** A hospital based descriptive study was conducted in gynaecological department of MIDAT hospital over 16 months period from 1<sup>st</sup> Bhadra 2071 to 30<sup>th</sup> Poush 2072 (17<sup>th</sup> August 2014 to 14<sup>th</sup> January 2016) among 115 women who underwent minimally invasive gynaecological surgeries (MIGS). Patient demographics, types of surgeries, indications of laparoscopy and hysteroscopy, reason for laparoscopic conversion, complications of surgeries and hospital stay were analyzed.

**Results:** There were total 115 minimally invasive gynaecological surgeries done in MIDAT hospital during study period. Laparoscopic gynaecological surgeries and hysteroscopy were performed in 86 (75%) and in 29 (25%) women respectively. Among laparoscopy, laparoscopic hysterectomy {31 (36%)} was the more common operation. During laparoscopy, conversion to open was done in nine (10.5%) patients. Complications of MIGS were seen in three (3.5%) women.

**Conclusions:** MIGS has acceptable morbidity, smooth post operative recovery and shorter hospital stay. In recent time, MIGS is gradually becoming popular in Nepal.

**Keywords:** Hysteroscopy, Minimally invasive gynaecological surgery, laparoscopy

## Introduction

Hysteroscopy was the first gynaecological endoscopic procedure performed when Pantaleoni used a cystoscope to identify uterine polyps in 1869. Laparoscopy was first performed by Jacobaeus of Sweden in 1910, wherein a Nitze cystoscope, composed of a candle and a hollow tube, was used to illuminate the peritoneal cavity. Diagnostic laparoscopy can provide valuable clinical information in patients with acute and chronic pelvic and abdominal pain. Most surgeries traditionally performed by the abdominal or vaginal approach can now be performed laparoscopically.<sup>1</sup>

Hysteroscopy is a low-risk technique that uses the endocervical canal, the natural passageway of the body,

to gain entry into the intrauterine environment. During the mid-1980s, hysteroscopy replaced blind dilatation and curettage as the standard procedure for precise diagnosis of intrauterine pathology. Every gynaecologist is required to learn the skills of hysteroscopy, just as every urologist surely must be an accomplished cystoscopist.<sup>2</sup>

The use of operative laparoscopy to complete some or all of the hysterectomy procedures has been grown rapidly.<sup>3,4</sup> It is well accepted that laparoscopy offers superior tissue image and anatomic view of the abdominopelvic cavity. Patients are in favor of laparoscopic hysterectomy because of its smaller incisions, less postoperative pain and discomfort, shorter hospital stay and quicker return to normal activity.<sup>5,6</sup>

Different types of gynaecological endoscopic surgeries are being practiced in many medical centers in Nepal. But there should be encouragement and support for upgrading the skill and practice on laparoscopic and hysteroscopic procedure. This study aimed to assess the practice of minimally invasive gynaecological surgeries in MIDAT hospital, Lalitpur, Nepal.

**Methods**

A hospital based descriptive study was conducted in gynaecological department of MIDAT hospital over 16 months period from 1<sup>st</sup> Bhadra 2071 to 30<sup>th</sup> Poush 2072 (17<sup>th</sup> August 2014 to 14<sup>th</sup> January 2016) among 115 women who underwent minimally invasive gynaecological surgeries (MIGS).

Women with gynaecological disorder who were fit for minimally invasive surgeries were included for the study. Huge multiple fibroid uterus, suspected ovarian malignancy, anticipated dense pelvic adhesion, disease with unstable haemodynamic status and patients refused to give written consent were excluded for the study.

Ethical clearance for the study was taken from administration of MIDAT hospital. Including Consent for conversion to open, written consent was taken from the each participant. Laparoscopy was carried out under general anaesthesia. Primary port was in the infraumbilical region. Hassen’s open technique was used for opening the primary port. Desired pneumoperitoneum was created by CO<sub>2</sub>. Under laparoscopic guidance, required accessory ports were opened. Standard laparoscopic techniques were used for individual pelvic pathology. Monopolar coagulation, bipolar coagulation and dissecting scissor were used for laparoscopic surgery. Conversion to laparotomy was done in technically difficult surgeries and uncorrected intra-operative complications. Required post-operative care was provided to patients underwent laparoscopic surgery. Office hysteroscopy was done under local anaesthesia by using normal saline as distension media. Patient demographics, types of surgeries, indications of laparoscopy and hysteroscopy, reason for laparoscopic conversion, complications of surgeries and hospital stay were recorded. Quantitative data were analyzed using Statistical Package for Social Studies (SPSS) version 15.

**Results**

During the study period of 16 months, 115 women who had undergone minimally invasive gynaecological surgeries were included in the study. The mean age of the patient was 35.6±10.51 years with minimum age of 17 years and maximum age of 78 years. Approximately 53 (46%) patients were from Newar community and 28 (24.3%) from Brahmin and Chhetri community (Table 1).

**Table 1: Patient demographics**

Characteristics	Frequency	Percent
<b>Age</b>		
<19	3	2.6
20-29	34	29.5
30-39	39	34
40-49	26	22.6
>50	13	11.3
<b>Caste</b>		
Brahmin/Chhetri	28	24.3
Newar	53	46
Tamang/Rai/Lama	19	16.5
Gurung/Magar	5	4.4
Madheshi	5	4.4
Nepali/Pariyar	5	4.4

The indications of laparoscopy were uterine pathology in 27 (31.3%), ovarian pathology in 28 (32.5%), ectopic pregnancy in 11 (12.7%), chronic PID with TO mass in six (6.9%), permanent sterilization in nine (10.5%) and sub fertility evaluation in five (5.8%) patients (Table 2).

**Table 2: Indications of Minimally invasive gynecological surgeries**

Indications of laparoscopy	Frequency	Percent
Uterine pathology	27	31.3
Ovarian pathology	28	32.5
Ectopic pregnancy	11	12.7
Chronic PID with TO mass	6	6.9
Permanent sterilization	9	10.5
subfertility	5	5.8
<b>Indications of hysteroscopy</b>		
Abnormal Uterine Bleeding	14	48.27
Thickened endometrium	8	27.58
Uterine anomaly	2	6.89
Missed Cu T thread	2	6.89
Bulky uterus	1	3.44
Cervical polyp	1	3.44
SOL in uterine cavity	1	3.44

The indications of hysteroscopy were abnormal uterine bleeding in 14 (48.27%) women, thickened endometrium in eight (27.58%), uterine anomaly in two (6.89%), missed Cu-T thread in two (6.89%), bulky uterus in one (1.16%), cervical polyp in one (1.16%) and submucosal fibroid in one (1.16%) woman (Table 2).

Laparoscopic hysterectomy was done in 31 (36%) women, laparoscopic cystectomy in 12 (13.9%), laparoscopic tubal ligation in nine (10.5%), laparoscopic unilateral salpingectomy in nine (10.5%), laparoscopic conversion to laparotomy in nine (10.5%), laparoscopy and tubal patency test in five (5.8%) and diagnostic laparoscopy in three (3.5%) patients (Table 3). Out of laparoscopic hysterectomy, there were 22 (25.6%) total laparoscopic hysterectomy with bilateral salpingoophorectomy, 4 (4.6%) total laparoscopic hysterectomy, 3 (3.48%) laparoscopic assisted vaginal hysterectomy with bilateral salpingoophorectomy and 2 (2.3%) laparoscopic assisted vaginal hysterectomy.

There were no complications seen in 83 (96.51%) women with laparoscopic surgery. Bladder injury was detected after conversion to laparotomy for internal bleeding while doing laparoscopic hysterectomy in one (1.16%) woman. Bowel injury was detected on 2<sup>nd</sup> post-operative day of laparoscopic hysterectomy in one (1.16%) woman and umbilical port site infection was seen in one (1.16%) woman (Table 3). There was no complication seen in women with diagnostic hysteroscopy.

The reason for laparoscopic conversion to laparotomy was dense adhesion in seven (8.13%) women, uncontrolled uterine bleeding in one (1.16%) and suspected ovarian malignancy in one (1.16%) woman (Table 4).

The mean hospital stay of surgery was 2.07±0.892 days with minimum of one day and maximum of seven days. After surgery, 57 (66.27%) patients were admitted in hospital for 2 days, 15 (17.44%) for 24 hours and 13 (15.11%) patients for 3 days (Table 4).

**Table 3: Types and complications of laparoscopic surgeries**

Types of laparoscopic surgeries	Frequency	Percent
Laparoscopic hysterectomy	31	36
Laparoscopic cystectomy	12	13.9
Laprosopic tubal ligation	9	10.5
Laparoscopic salpingectomy	9	10.5
Conversion to laparotomy	9	10.5
Laparoscopic salpingoophorectomy	8	9.3
Laparoscopy and Tubal patency test	5	5.8
Diagnostic laparoscopy	3	3.5
<b>Complications of laparoscopic surgeries</b>		
None	83	96.51
Bladder injury	1	1.16
Bowel injury	1	1.16
Port site infection	1	1.16

**Table 4: Reasons for conversion to laparotomy and hospital stay**

Reasons for conversion to laparotomy	Frequency	Percent
Dense adhesion	7	8.13
Uncontrolled uterine bleeding	1	1.16
Ovarian malignancy	1	1.16
<b>Hospital stay</b>		
One day	15	17.44
2 days	57	66.27
3 days	13	15.11
7 days	1	1.16

**Discussion**

In this study, 73 (63.4%) patients were in between 20-40 years of age and 26 (22.6%) in between 40-49 years of age with mean age of 35.6±10.51 years. The mean age was 47.9±5.6 years among total laparoscopic hysterectomy group in comparative study between laparoscopic and abdominal study.<sup>7</sup> The mean age was 38.6 ±10.8 years in

105 female patients with abnormal uterine bleeding who were undergone diagnostic hysteroscopy aged between 21 to 61 years and 34.3% were in between 40-50 years.<sup>8</sup> The mean age was 31.7 years (range 18 -47 years) in 28 patients of laparoscopic dermoid removal.<sup>9</sup> The mean age was 33 years with age ranges from 20-46 years among 48 patients of chronic pelvic pain undergone diagnostic laparoscopy.<sup>10</sup> The mean age of the patients undergoing laparoscopic surgery was 30±7.48 years (mean± SD) with maximum patients in the age group of 25-29 years.<sup>11</sup>

In this series, laparoscopy for uterine pathology was done in 27 (31.3%), for ovarian pathology in 28 (32.5%) and for ectopic pregnancy in 11 (12.7%) women. Laparoscopic hysterectomy was done in 31 (36%) women, laparoscopic cystectomy in 12 (13.9%), laparoscopic tubal ligation in 9 (10.5%), laparoscopic unilateral salpingectomy in nine (10.5%), laparoscopic conversion to laparotomy in nine (10.5%), laparoscopy and tubal patency test in five (5.8%) and diagnostic laparoscopy in three (3.5%) patients. Out of laparoscopic hysterectomy, there were 22 (25.6%) total laparoscopic hysterectomy with bilateral salpingoophorectomy, 4 (4.6%) total laparoscopic hysterectomy, 3 (3.48%) laparoscopic assisted vaginal hysterectomy with bilateral salpingoophorectomy and 2 (2.3%) laparoscopic assisted vaginal hysterectomy.

There were 133 (32.5%) laparoscopy surgeries done for uterine pathology, 94 (23%) for ovarian pathology and 267 (65.4%) for tubal pathology. In gynaecological laparoscopy, salpingectomy was done in 21 (5.1%) women, cystectomy in 69 (17%), myomectomy in 61 (15%), laparoscopic assisted vaginal hysterectomy in 63 (15.4%) and total laparoscopic hysterectomy in nine (2.2%) women.<sup>12</sup>

In hysteroscopy, 14 (48.3%) women had undergone for evaluation of abnormal uterine bleeding, 2 (6.8%) for localization of missed thread and removal and 13 (44.8%) for other cause. A study conducted among 243 females who were performed diagnostic and therapeutic hysteroscopy, 236 (97.1%) were evaluated and treated for vaginal bleeding and 7 (2.9%) for recurrent abortions.<sup>13</sup>

There was no complication seen in office hysteroscopy. In a study for complications of hysteroscopy, 14 (0.12%) women developed uterine perforation in diagnostic hysteroscopy, 5 (0.2%) women developed fluid overload in operative hysteroscopy and 19 (0.75%) women developed uterine perforation in operative hysteroscopy.<sup>14</sup>

There were three (3.48%) women who developed complication in laparoscopic surgery. Urinary bladder injury, small bowel injury and port site infection were found

in one woman each. Re-operation was done in one woman for small bowel injury on second post-operative day. In a study of total laparoscopic hysterectomy, technique and complication of 830 cases, re-operative complications occurred in 38 (4.7%) patients. Urologic injuries were observed in 23 (2.6%) patients, intestinal injuries in 6 (0.72%) and hemorrhagic complications were seen in 23 (2.6%) patients.<sup>15</sup>

In hysteroscopy, none of the woman got admitted for overnight in the ward. In laparoscopic surgery, 57 (66.27%) women were discharged on 2<sup>nd</sup> post-operative day with mean hospital stay was 2.07±0.892 days. One woman was admitted till 7<sup>th</sup> post-operative day for re-operation after total laparoscopy hysterectomy due to small bowel injury. The mean hospital stay among total laparoscopic hysteroscopy was 1.2±0.4 days, ranges from 0 to 3 days in a comparative study conducted between total laparoscopic and vaginal hysterectomy.<sup>16</sup>

## Conclusion

Minimally invasive Gynaecological surgery acceptable morbidity, smooth post operative recovery and shorter hospital stay. In recent time, MIGS is gradually becoming popular in Nepal.

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